

Attention Deficit Hyperactivity Disorder: Successful Programs and Approaches

An Honors Thesis (HONRS 499)

By

Jennifer Marie Scales

Thesis Advisor
Mrs. Dixie Denton

Mrs. Dixie Denton

Ball State University

Muncie, Indiana

April, 1998

May 9, 1998

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ABSTRACT

Purpose of Thesis

Today more and more children are being diagnosed with attention deficit hyperactivity disorder than ever before. It is estimated that one child in every classroom will have attention deficit hyperactivity disorder. With the increasing numbers of children being diagnosed it is extremely important that educators be well informed on the subject matter. This discussion of attention deficit hyperactivity disorder gives an in-depth look at successful programs, strategies, techniques, and treatments for a child with attention deficit hyperactivity disorder. It also briefly discusses common symptoms and causes of the disorder. Finally, there is a brief look at how attention deficit hyperactivity disorder effects adolescents and adults in our society.

Attention Deficit Hyperactivity Disorder: Successful Programs and Approaches

Today in our society it is estimated that 5 - 10 percent of school age children are diagnosed as having attention deficit hyperactivity disorder. Attention deficit hyperactivity disorder is often referred to as ADHD. ADHD is defined as a pattern of behavior in children characterized by short attention spans, impulsivity, and hyperactivity (Rabiner, 1997). In the 1970s experts started using the term "attention deficit disorder" to describe the condition. Just recently the word "hyperactivity" has been added back to the original definition. According to an estimate by the National Institute of Mental Health, about one student in every classroom is believed to have the attention deficit hyperactivity disorder (Hancock, 1996). As a beginning educator I have had the opportunity to work with children diagnosed as having ADHD on a daily basis. Children having the attention deficit hyperactivity disorder can cause an educator and their peers many problems if the classroom teacher is not aware of the disorder. In order for an educator to successfully mainstream a child having ADHD they need to become familiar with successful programs, strategies, and treatments. In this paper I plan to discuss the symptoms of ADHD, medical intervention treatments, behavioral therapy treatments, and current research on successful approaches and strategies that teachers can utilize to better educate children diagnosed with attention deficit hyperactivity disorder.

Overview of ADHD

Attention deficit hyperactivity disorder is a term used to describe a set of symptoms many children share. Between 1.35 and 2.25 million school age children are said to have ADHD (Coleman, 1988). The research shows that boys are 10 times more likely than girls to be identified as having ADHD. Girls are more likely to have attention deficits without the

hyperactivity. Girls often times tend to be well behaved, therefore they are less likely to come to the attention of their teacher even though their school performance may suffer significantly.

There are many different symptoms of ADHD that parents and teachers can look for in order to determine if a child could possibly have the attention deficit hyperactivity disorder. The following table describes symptoms for children having attention deficit disorder with and without hyperactivity. The table can be found in *Hyperactivity and Attention Disorders in Children*, by Martin Baren.

SYMPTOMS OF AN ADHD CHILD	
WITH HYPERACTIVITY: (Impulsive)	WITHOUT HYPERACTIVITY (Inattentive)
<ul style="list-style-type: none"> • Is fidgety. • Leaves sit when should not. • Runs or climbs inappropriately. • Talks excessively. • Has difficulty playing quietly. • Is always on the go. • Blurts out answers. • Has trouble waiting their turn. • Interrupts. 	<ul style="list-style-type: none"> • Has difficulty following through on instructions. • Has difficulty keeping attention on tasks or play activities. • Loses things necessary for tasks and activities at school and home. • Does not listen. • Fails to give close attention to details. • Seems disorganized. • Has trouble with tasks requiring long term mental effort. • Is forgetful. • Is easily distracted.

Some children may have all behaviors in one group or the other, but for a diagnosis of ADHD , children should have at least two-thirds of the behaviors in one group or the other for at least six

months. Many children with ADHD are inconsistent in their behaviors, so they may show symptoms at one time of day but not at another.

When you lump all the characteristics found in the table together the core features of the disorder fall into three main categories; impulsivity, inattention, and hyperactivity. Associated features could also include oppositional behavior, conduct disorders, emotional difficulties, and cognitive learning disabilities (Report to the Seventy Second Texas Legislature, 1992). The symptoms may appear at ages 4 to 7 and peak between 8 and 10. The difficulties are typically most apparent in structured settings such as school. As a result, many ADHD children are not identified until they enter school, this could be one reason why some feel that symptoms tend to peak at age 8. In some settings, ADHD children may be able to pay attention quite well. These activities include fast moving television shows, video games, and novel situations (Waddell, 1998). Television and video games offer the type of stimulation that helps these children to focus. These are passive situations in which the children are actually being stimulated from the outside.

Attention deficit hyperactivity disorder can be a mild, moderate, or severe problem depending on the amount of symptoms the child exhibits. A child exhibiting a mild case of ADHD will exhibit few if any symptoms in excess of those required to make the diagnosis and only minimal or no impairment in school and social functioning. A child diagnosed with a moderate case of ADHD will show symptoms or functional impairments between "mild" and "severe." A child with a severe case of ADHD will exhibit many symptoms in excess of those required to make the diagnosis and significant and pervasive impairment in functioning at home and school and with peers (American Psychiatric Association, 1987).

Diagnosis and Evaluation of ADHD

Diagnosis of ADHD is not a simple matter, in fact it is a very complex process. It is a huge mistake for a "snap" diagnosis to be made or to try to intervene before all the facts are known. The evaluation process should be done by the following specialists:

- Pediatricians and/or neurologists with a background in behavioral and developmental problems.
- Child or adolescent psychiatrists.
- Psychologists and licensed mental health professionals.
- Specially trained family and general practitioners.
- A team of professionals from the above specialties.

The diagnosis will include an examination of the child's behavior and a physical examination.

Since ADHD is defined as a behavioral disorder there are not any high-tech tests or blood counts that can make the diagnosis. The diagnosis must be based on the way the child behaves in different situations. When a child exhibits "textbook" symptoms of ADHD the diagnosis can be fairly easy because everyone agrees. However, this is most likely not the case.

On page two are listed the behaviors that are used to make a diagnosis of ADHD, and this is where to begin the diagnosis process. It is extremely important to get information about the child's behavior in many different circumstances, including school, play, home, and various other settings. Dr. Martin Baren states that observations from school are particularly important and teachers will be asked to report on the child's ability to do the following:

- Pay attention for an appropriate amount of time.
- Control impulses.
- Follow directions and rules under rather boring conditions.
- Complete long work assignments of the type the child might get in a classroom situation or as homework.
- Show restraint in situations that require it.

Teachers and other observers often use some excellent "checklists" that are available for rating behaviors. Checklists help give a better idea of how the child is doing in many different areas of behavior in school or at home.

A thorough physical examination, including hearing and vision is very important to exclude certain medical problems. It is also important to find out whether the child has any developmental difficulties such as problems with motor skills, memory, remembering things in sequence, listening and speaking, or recognizing and reproducing pictures and symbols.

None of the laboratory tests that are currently available will help in the diagnosis of ADHD, unless a particular problem such as anemia, lead poisoning, or seizures might be present. Computerized tests are sometimes used to determine attention spans, however, there is usually no need for elaborate brain scans, MRI's or any other high-tech medical tests.

What Causes ADHD

No one knows what causes attention deficit hyperactivity disorder. There are still many different theories about the true cause of ADHD. "Until the 1970s, experts felt that many of these people had suffered some type of brain damage or that the brain had some other disorder" (Baren, 1994).

More recently, it has become clear that the problem is not with the actual structure of the brain. Instead, researchers have been looking at brain chemistry. Researchers have been especially interested in the substances that help transmit messages (called neurotransmitters) within the brain, such as dopamine, norepinephrine, and serotonin. If one or more of these chemicals is in short supply, or for some reason is not doing its job, that would account for many of the signs and symptoms of the attention deficit hyperactivity disorder.

There is now evidence that ADHD is often inherited when a child is born. "At the present time, specialists agree that at least 30 to 40% of children diagnosed with ADHD have relatives with the same problem" (Baren, 1994). This statistic does not mean that all children in a family will have the attention deficit hyperactivity disorder. In most families with ADHD, there is usually only one child who shows these signs and symptoms. Researchers have also found that a child's environment at both home and school can either improve or worsen the ADHD condition. Not all children who have inherited a tendency towards ADHD will develop it. There are many factors during pregnancy and after birth that could lead to a child having ADHD. Factors that could cause ADHD to emerge during pregnancy include; alcohol abuse, drug abuse, poor maternal nutrition, and chemical poisons like lead. After birth factors that could cause ADHD to emerge are brain injuries during or after birth, infections, iron deficiency, and chemical poisons, such as lead.

There are plenty of myths about what could cause the attention deficit hyperactivity disorder. The following table lists some common myths about the causes of ADHD. It is accepted that none of these myths cause ADHD, although some may cause increased problems for a child having the attention deficit hyperactivity disorder.

Myths about ADHD
<ul style="list-style-type: none">• Too much sugar• Too little sugar• Aspartame• Food sensitivity• Food additives/coloring• Lack of vitamins• Television• Fluorescent lighting• Video games• Allergies

Many of these myths presented above have been around a long time, but there is no scientific proof that any of the above myths are responsible for ADHD. However, there is some evidence that the behavior of a small number of children, especially those under five, can be affected by what they eat or drink. "Children in rare instances have behavior difficulties after eating certain types of highly colored foods and substances such as aspartame" (Baren, 1994). Although doctors have not discovered the precise cause of ADHD they have been somewhat successful in treating children with the attention deficit hyperactivity disorder.

ADHD Treatments

The most successful treatments today include medical intervention and behavioral therapy. Medical intervention is the leading treatment for ADHD. The most common type of drugs administered to children fall under the category of psychostimulant medications. The University of California, Irvine Attention Deficit Disorder Center reviewed a collection of literature on using medication to treat children with the attention deficit disorder. Their findings showed that 60 to 90% of children diagnosed with ADHD receive stimulant therapy for extended periods of time (Swanson, 1995). The most common psychostimulant medications used to treat the attention deficit hyperactivity disorder are Ritalin (methylphenidate), Dexedrine (destroamphetamine), and Cylert (pemoline). "These stimulants have the ability to increase the alertness of the central nervous system. They appear to have the ability to lengthen attention spans, control impulsivity, decrease distractibility and motor activity and improve visual motor integration" (Lowenthal, 1993).

The beneficial effects of stimulant medication can be dramatic. Attention to assigned class work can be improved almost to the extent that they can not be distinguished from their

classmates. Activity levels can decline to within normal limits and impulsivity can also decrease. In many cases peer relationships can also improve given the appropriate amount of time. Academically speaking, children who respond positively to medication show clear improvements in both quantity and quality of work they complete. The beneficial effects produced by stimulant medication occur quickly. Throughout my experience working with children having the attention deficit hyperactivity disorder I found that the child's behavior usually improved within an hour. Once the medication began to take effect it was like having a totally different child in the classroom.

Appendix A and Appendix B provide strong evidence of the beneficial effects of psychostimulant medication. Appendix A and B are writing samples taken from the same third grade student at Parker Elementary, located in New Castle, Indiana. The writing samples were taken on two different days. Appendix A, located on page 26 is a writing sample that was taken on a day when the student had not gotten his morning dosage of medication. It is evident that the student's writing content is very unclear and that the handwriting is hard to distinguish. Appendix B, located on page 29 is a writing sample taken on a day when the student had his morning dosage of medication. The differences seen between these two writing samples are remarkable. Writing sample B is clearly written, it is neat, and very understandable. When comparing the two writing samples it becomes quite clear that the psychostimulant medication does have a beneficial effect on the quality of work the student is able to do. Without the medication the quality and quantity of work is far below grade level.

While there are many beneficial effects of stimulant medication there can also be some adverse side effects for some children. "These include: sleep difficulties, stomachaches, headaches, appetite reduction, drowsiness, irritability, nervousness, and excessive staring among

others" (Lowenthal, 1993). In very rare cases stimulant medication can lead to nervous tics, hallucinations, and bizarre behavior.

When parents are considering medication for their child the above side effects can have a great impact on their decision. However, it is important to emphasize that the vast majority of children with ADHD do not experience any adverse side effects. Based on current carefully controlled studies, physicians have concluded that when medication is properly employed it is quite safe and the side effects are minimal. When side effects do occur they are frequently short term and generally disappear when the dosage is reduced. Despite the safeness of stimulant medication it is still obviously important for parents and physicians to stay in close contact. A child's dosage of medication is extremely important for a child with attention deficit hyperactivity disorder, therefore physicians need to check on a child's progress on a continuous basis.

Ritalin is the best known medication for treatment of ADHD. The generic form of Ritalin is called Methylphenidate, also known as MPH. "In general, most studies have shown MPH to be between 10 to 30% less effective than the brand named Ritalin" (Clark, 1995). MPH is also different in the time it takes the medication to take effect. Some pharmacists still insist that MPH and Ritalin are identical, this is definitely not true. Most physicians who specialize in treatment of ADHD almost always insist upon use of the brand name medication.

"Ritalin works in the brain by augmenting levels of dopamine, a frontal lobe chemical which weeds out distractions and induces a calm, focused mindset" (AOL, 1994). Ritalin is perceived to be the quickest of all medication in onset of action, usually 20-30 minutes. Due to Ritalin's quick onset of action, there is generally a very quick drop-off when the medication wears off. The quick drop off often causes a degree of anxiety or agitation. Although Ritalin

— takes effect quickly, it does not last as long as other medications do. Many children get benefit for only 2-4 hours. Some children may require more than one dose of Ritalin a day, depending on the severity of the disorder. Ritalin also has a very inconsistent rate of absorption. Some adults and children may absorb up to 80 to 90% of any given dose, while others absorb only 30 to 40%.

"Ritalin has been proven to be very beneficial to children having ADHD. While taking Ritalin there has been clear evidence of short term improvements in performance on academic tasks in the classroom, peer associations, less distractibility, and more on task behaviors" (Cantwell, 1975). There was a congressional investigation held where they created a panel to see how effective the stimulant Ritalin really was. The panel consisted of the Department of Health, Education and Welfare, and the Office of Child Development. They found that 60 to 70% of hyperactive children respond effectively to Ritalin (Cantwell, 1975).

"From 1990 to 1996 the number of children taking Ritalin doubled to more than 1.5 million" (AOL, 1994). This statistic has led many people to believe that Ritalin is being over prescribed and that the effects of Ritalin could be more harmful than beneficial. Dr. Peter R. Breggin, Director of the International Center of Study of Psychiatry and Psychology and Associate faculty at the Johns Hopkins University Department of Counseling, is a strong critic of the use of Ritalin to treat children with ADHD. "Ritalin does not correct biochemical imbalances, it causes them" (Breggin, 1993). Dr. Breggin also adds that there is some evidence that Ritalin can cause permanent damage to a child's brain and its function. "Ritalin decreases blood flow to the brain and routinely causes other gross malfunctions" (Breggin, 1993).

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Dr. Breggin believes that pediatricians, parents, and teachers are not aware of these hazards because a large body of research demonstrating the ill effects of this drug has been ignored and suppressed in order to encourage the sale of the drug. Damaging effects of Ritalin found by Dr. Breggin include:

- Decreased blood flow to the brain, an effect recently shown to be caused by cocaine where it is associated with impaired thinking ability and memory loss.
- Disruption of growth hormone, leading to suppression of growth in the body and brain of the child.
- Permanent neurological tics, including Tourette's Syndrome.
- Addiction and abuse, including withdrawal reactions on a daily basis.
- Psychosis, depression, insomnia, agitation, and social withdrawal.
- Possible shrinkage or other permanent physical abnormalities in the brain.
- Worsening of the very symptoms the drug is supposed to improve including hyperactivity and inattention.
- Decreased ability to learn.

Dr. Breggin's findings and opinions are just one of many. The majority of scientific studies conducted to not support his beliefs. However, it is important that we not only look at the positive studies of Ritalin but also the adverse studies.

Dexedrine is the second most commonly prescribed psychostimulant medication used to treat the attention deficit hyperactivity disorder. It is second only to Ritalin in sales use for ADHD. "Dexedrine is an extremely useful alternative medication for ADHD, and is far more commonly prescribed for adolescents and adults by specialists than is Ritalin" (Clark, 1995). The generic form of Dexedrine is Dextroamphetamine Sulfate. A few years ago Richmond Pharmaceuticals introduced another form of Dextroamphetamine Sulfate now commonly known as DextroStat. At this time research is showing that Dexedrine and DextroStat are identical in impact, however most pharmacists still prefer Dexedrine.

Dexedrine is 30 minutes slower in onset of action than Ritalin, but the beneficial effects of Dexedrine last about an hour longer. This is especially true in adults. Unlike Ritalin,

Dexedrine is typically always completely absorbed, therefore one does not see the variation typically seen with Ritalin. One study found that Vitamin C in orange juice may in some cases reduce Dexedrine absorption.

Dexedrine does not receive the negative media attention that Ritalin does because it is not prescribed as much and is far less consistently stocked by pharmacies. However, Dr. Corijdon Clark reported that Dexedrine produces a greater potential for reduced appetite as a side effect than does Ritalin.

Cylert is the third psychostimulant medication prescribed to people having the attention deficit hyperactivity disorder. The generic name for Cylert is pemoline, but there is not a generic equivalent available at this time.

Cylert is completely different from any other stimulant used to treat ADHD. It is comparatively slow in onset of action, about an hour, and unlike the other stimulants, in most cases, one must take this medication for 1-2 weeks prior to noticing any distinct improvement in behavior. Cylert must be "built up" slowly over several weeks and if the medication ever needs to be discontinued it should be done in small increments. Unlike Ritalin or Dexedrine, it is very important not to skip a dosage of Cylert for any reason. If a dosage of Cylert is accidentally missed, it should be taken as soon as possible.

There has been growing concern that the use of Cylert could cause a liver enzyme increase, which in return could cause an increased risk for jaundice, and hepatitis in some people. This complication does in fact appear to be quite uncommon and possibly even rare. Physicians who do prescribe Cylert pay close attention to any abnormal changes in the liver. Any abnormal change in the liver enzyme appears to be fully reversible when the dosage of Cylert is stopped.

In general Cylert is only used to treat ADHD in unusual situations. It appears to be less effective than other stimulants, more expensive, and many aspects of its management are much more complex. "It does have a role in management of ADHD in certain cases, but should rarely be prescribed as a first-choice medication" (Clark, 1995).

If stimulant medication does not work, or the child has additional symptoms other medications are sometimes used. Tricyclic antidepressants are also sometimes used when treating the attention deficit hyperactivity disorder. "In a review article published in the April, 1996 issue of the *Journal of the American Academy of Child and Adolescent Psychiatry*, it was reported that 29 studies had been conducted evaluating the safety and efficacy of treating ADHD in children, adolescents, and adults with antidepressants. None of these studies reported robust response rates, meaning at least 50% of the subjects receiving the medication showed significant improvement. Eighteen of the studies reported a moderate response rate, meaning improvement was observed in between 30-50% of subjects" (Lowenthal, 1993).

The following table lists other commonly prescribed medications physicians may use when treating the attention deficit hyperactivity disorder if psychostimulant medication treatment is unsuccessful.

Drug	Descriptions	How It Works	Comments
Imipramine Desipramine Nortriptyline	Antidepressants	Improve the supply of neurotransmitters in the brain. Improve mood.	Some improvement in impulsivity, hyperactivity. No improvement in attention.
Bupropion	Antidepressant	Improves mood and possibly attention. Works on neurotransmitters.	Some help for ADHD symptoms-mostly in adults so far.
Clonidine	Treats tic disorders in children and blood pressure in adults.	Works on brain neurotransmitters.	Sometimes helpful for children with tics as well as ADHD; helps calm aggressive behavior.
Thioridazine	Usually given for severe emotional problems.	Can help behavioral difficulties by changing brain chemistry.	May be useful in very small children with ADHD.
Lithium	Lithium is an antimanic drug	Works on brain chemistry.	May be useful in calming aggression in children.
Fluoxetine Sertraline Paroxetine	Treats depression in adults, including obsessive compulsive problems.	Works on brain neurotransmitters.	May be helpful in children with attention disorders who are also depressed.
Clomipramine	Used in adults with obsessive compulsive disorders.	Works on neurotransmitters.	Same as above. Occasionally used in children with ADHD.

"It is important to remember that children with ADHD should not be given medication alone.

Some type of educational and psychological therapy should be included in every treatment"

(Baren, 1994).

Despite the well documented benefits of stimulant medication for treating ADHD, medication is no "sure cure," and some children with ADHD should not receive it. There are several reasons why medication therapy is not always the best approach when treating the

3. Specify a goal behavior, the behavior you want the child to exhibit.
4. Determine appropriate reinforcements to be used, based on the surroundings, needs, and interests of the child.
5. Select a reinforcement schedule, i.e., will approximations of behaviors be reinforced? How often will reinforcements occur? How long will the appropriate behavior be reinforced.
6. Implement the program.
7. Evaluate and modify the plan based on its degree of success.
8. Implement the revised plan.

Designing a good behavior plan out of the above steps and implementing it effectively is not easy. Parents may often require professional assistance in order to successfully implement the behavioral management plan. Although the specifics of a good plan will vary from child to child and from parent to parent, there are several general principles that are important to keep in mind when using behavior modification. First, be very clear about what behavior is expected of the child in order to earn the reward and make sure the child understands this. Second, make sure the expectations for the child is reasonable. It is important not to work on too many things at one time, this will confuse the child. Also, let the child participate in choosing the types of rewards he or she can earn. Another key principle in the behavior modification plan is to design a program that allows the child to experience initial success and provides lots of social rewards as well as, tangible rewards. Finally, be consistent, so that the child always knows what is expected of him or her.

Behavioral therapy is extremely successful for a majority of children. Greater benefits are seen when behavioral therapy is used in combination with psychostimulant medication. It is also very important to establish educational approaches with the classroom teacher when behavioral therapy is being implemented.

Parents and teachers need to establish educational approaches as soon as the ADHD child enters the classroom. Children spend the majority of their day in the classroom working with their classroom teacher. Many children with ADHD are likely to have problems in the classroom. In many cases the teacher is more aware of certain behaviors than the parents. Attention problems may cause difficulties, both in class and with homework. If there is a learning disability, these attention difficulties tend to make it worse. Teachers have the responsibility of educating children of varying ability on a daily basis. Many children with ADHD view themselves as failures at an early age. In order to ensure that a child with ADHD is able to succeed in the classroom it is critical that teachers establish a classroom that a child with an attention deficit hyperactivity disorder can function in and succeed. Dr. Martin Baren a clinical professor of Pediatrics established thirteen successful approaches a teacher can follow in order to help an ADHD child succeed in the classroom. These successful approaches are as follows:

SUCCESSFUL CLASSROOM APPROACHES FOR THE ADHD CHILD	
<ul style="list-style-type: none"> • Write all directions on the board. • Break instructions into small steps. • Have the child sit in the front of the class. • Give more time for tests and writing assignments. • Remind the child to turn in homework. • Provide a structured learning environment. • Let the child use tape recorders to record lessons if necessary. 	<ul style="list-style-type: none"> • Use simplified textbooks. • Tailor homework assignments to fit the child. • Reward positive behavior. • Ignore negative behavior as much as possible. • Do not give bad marks for the child's work because of difficulties caused by the attention disorder. • Do not punish the child because of difficulties arising from lack of organization or problems with attention.

Many if not all of these approaches are useful for a majority of children, even if they do not have attention deficit hyperactivity disorder. The approaches are easy to use and are not all that time consuming for teachers. In my experience with working with ADHD children the above approaches are extremely helpful for both the ADHD child and the classroom teacher. The approaches help the ADHD child know exactly what is expected in the classroom, therefore, he/she will not become frustrated. When an ADHD child becomes frustrated due to lack of understanding behavior problems could begin to emerge.

Educational Services for Children with ADHD

If a parent believes that their child may require special services at school because of problems related to ADHD, it is important to understand the process by which these services can be obtained. Public schools have certain procedures that must be followed prior to providing special services for any child. Procedures will vary from county to county and state to state, but they all should be somewhat similar.

The first thing parents can do is to request that their child be evaluated by the school to receive special services. The classroom teacher can also request an evaluation of a child if they feel it is necessary. When parents initiate the evaluation process request it is a good idea to do so in writing so that a copy can be made. If the teacher initiates the request the parents must be notified and given a detailed description of screening procedures that will be conducted. Parents must also provide written consent for the evaluation to take place.

The initial stages of a school based evaluation will generally include hearing and vision screenings, classroom observations and intellectual and academic screening tests. It is the

responsibility of the teacher to complete a standardized behavior rating form. In many cases parents may be interviewed about their child's developmental history.

In addition to gathering the above information, there will also be two specific interventions implemented within the child's regular classroom over a 4-6 week period. These interventions should be designed to target behaviors that are specifically caused by a child having attention deficit hyperactivity disorder. Examples of such behaviors may be; not completing assignments, not following rules, talking out, and not staying seated. "It should be noted that public schools will require that these interventions be implemented prior to providing any additional services, even if the child has already been diagnosed with ADHD by a physician. The reason for this is that the school wants to learn whether a child's educational needs can be met within the regular classroom" (AOL, 1997).

At the conclusion of the 4-6 week period an assistant team needs to be established. "The assistant team will include individuals at the school who are responsible for making determinations about the need for special services" (AOL, 1997). In most cases the regular classroom teacher, special education teacher, principle and special education director are part of the assistant team. The assistant team will review the information collected and decide on the next step. If the child was previously diagnosed as having ADHD by a physician and the interventions were successful it is likely that an "accommodation" plan will be written. An accommodation plan will describe what needs to be done in the regular classroom in order for the ADHD child to succeed. The accommodation plan generally consists of the successful approaches found in the table on page seventeen. Once the accommodation plan is written it must be implemented by the regular classroom teacher. It is vital that parents be active

participants in the meeting where the plan is constructed and they should receive a written copy of the plan once established.

If the interventions were not successful the assistance team will need to do additional evaluations. Parents consent must be given again before additional screening can begin. "The purpose of additional evaluations are to determine whether the child is eligible for special educational services because of ADHD being under the Other Health Impaired category" (AOL, 1997). An in-depth educational evaluation will need to be completed in order to evaluate the child's current level of academic functioning. An individual IQ test could also be administered during the second evaluation process. In addition, if a physician has not diagnosed the child as having ADHD the child must undergo a standard medical evaluation. The child's physician will then be required to provide his diagnosis and findings in writing to the school that the child attends.

"Federal guidelines stipulate that the second part of the evaluation which includes all necessary testing and the development of the individual education plan, better known as an IEP must be completed within 90 days of when the parents signed the consent form allowing testing to occur" (AOL, 1997). The 90 days does not stop during the summer when school is out, in fact the evaluation can be completed during the summer if required.

After the evaluation process is complete, the information gathered will be used to determine what services the child is eligible for. The ADHD child's parents and the school need to be in agreement on the services provided, but parents have the right to appeal any decision they disagree with.

An individualized education plan will be developed when a consensus is met by the school and the child's parents. An IEP is a document that spells out educational goals and

procedures that need to be followed for a specific child requiring special services. "The IEP is a legal document and once its contents have been agreed upon, it can not be changed without parent permission" (AOL, 1997). A child's parents or the school can request changes be made to an IEP any time. IEP's need to be reviewed every year so that they remain appropriate for the age and level of the child the IEP has been written for.

Long-term Outcomes for ADHD Children

Will children simply grow out of attention deficit hyperactivity disorder? This question is constantly being asked by parents and educators. Contrary to recently held views, it is now clear that children with ADHD will not simply "outgrow" their symptoms when they reach adolescence. Dr. Baren states that sometimes improvements can be seen as the child matures for the following reasons:

- Children very often learn to curb their hyperactive behavior, usually because of peer pressure.
- As people mature, they learn to compensate for some of their difficulties. For example by concentrating on material they are interested in and ignoring things they are not interested in.
- Some children can learn to compensate for their problems, but others may get worse in adolescence, especially those who were strongly hyperactive when younger.
- The majority of ADHD children will do well as adults, or at least get by.
- Sometimes a short attention span is part of a general lag in development, especially under the age of six. If that is the case, the child may grow out of it. When the general development catches up, so will the ability to pay attention.

In addition to continued ADHD symptoms, difficulties in a number of other areas are not uncommon. "As many as half of ADHD children exhibit behavior problems, defiance, and antisocial acts such as fighting, stealing and vandalism. When comparing ADHD adolescents to

their non-ADHD peers, teenagers with this disorder are more likely to have been held back in school, to have been suspended from school, and to drop out of school completely" (AOL, 1997). A recently completed study indicates that as young adults, children with ADHD will have completed approximately two years less formal schooling than their peers.

Many of the signs and symptoms of ADHD may persist into the adult years, including restlessness, disorganization, being impulsive, and social difficulties. Adults may still have:

- A tendency to be easily distracted.
- Hyperactivity, usually in the form of restlessness.
- Mood swings (which very often become the main symptom in adults).
- Inability to complete things.
- A hot temper, with low stress tolerance.
- Difficulties getting along with spouses, co-workers, and other significant people in their lives.

Several studies have followed children with ADHD into adulthood. Results of these studies vary, but it appears that about 50% continue to show evidence of the disorder in adulthood, especially attention problems and impulsivity. "Almost one-third will have dropped out of high-school and only 5% will complete a university degree compared to 40% of their peers" (AOL, 1997).

On a positive side, approximately one-third of children with ADHD appear to be relatively well adjusted and symptom free as young adults. Predictors of such good adult outcome have not been fully identified. There are, however, several factors that are important when looking at successful ADHD adults. First, higher levels of intellectual functioning and better school performance are associated with better adult outcome. Second, the absence of severe behavior and conduct problems during childhood before age ten is associated with better

adult outcome. Finally, children with ADHD who manage to get along well with their peers are more likely to have better adjustments as adults.

These factors have clear implications for ADHD parents. "It is very important to stress that it does not appear to be the primary symptoms of ADHD that are most directly responsible for negative adult outcomes that many children with ADHD children attain" (AOL, 1997). Instead, it is the behavioral, social, and academic difficulties that children with ADHD are at increased risk for a negative adult outcome.

The best way to prepare a child for adulthood is through a combined approach involving medical, behavioral, and educational approaches. "These treatments should not be stopped with adolescence, because they remain very effective throughout the adult years" (Baren, 1994). It is critical that a parent carefully monitor an ADHD child's overall development, and not just focus on the ADHD symptoms.

Conclusion

Attention deficit hyperactivity disorder is a pattern of behavior in children characterized by short attention spans, impulsivity, and hyperactivity. It has been estimated that one student in every classroom has ADHD. With this in mind it becomes painfully clear how important it is for educators to be well informed on appropriate techniques, strategies, programs and treatments.

Once a child as been diagnosed with attention deficit hyperactivity disorder it is crucial that the classroom teacher be well prepared and equipped with all the necessary information in order to successfully educate the ADHD child. There are many successful strategies that a classroom teacher can implement in order to ensure a child having ADHD educational success.

Many of these strategies are helpful for all children and can make the classroom environment more conducive for learning.

Psychostimulant medication and behavioral therapy are key factors when treating children with ADHD. Ritalin, Dexedrine, and Cylert are the three main psychostimulant medications being prescribed to children today, Ritalin being the most common. These medications may cause minor side effects in some children, but for the most part psychostimulant medication is very effective and safe. Behavioral therapy needs to be used in conjunction with medical therapy in order to be most effective. Parents and classroom teachers need to work together to establish a consistent, firm and fair plan for children having ADHD. It is crucial that the ADHD child be aware of what is expected in both the home and school environment.

Children with ADHD will not simply "outgrow" the problem. It can persist well into adulthood. Some children do learn to control their behavior, while others do not. The best way to prepare an ADHD child for adolescence and adulthood is through the combined approach described in this paper, involving medical, psychological, and educational treatments. Carefully monitoring the overall development of the ADHD child is much more critical than focusing on the ADHD symptoms.

An increasing number of children are being diagnosed with the attention deficit hyperactivity disorder. In order for a child or an adult to function successfully within our society, it is crucial that everyone be better informed on the attention deficit hyperactivity disorder. We have made many improvements educating children with attention deficit hyperactivity disorder, but many more improvements need to be made. There are still many

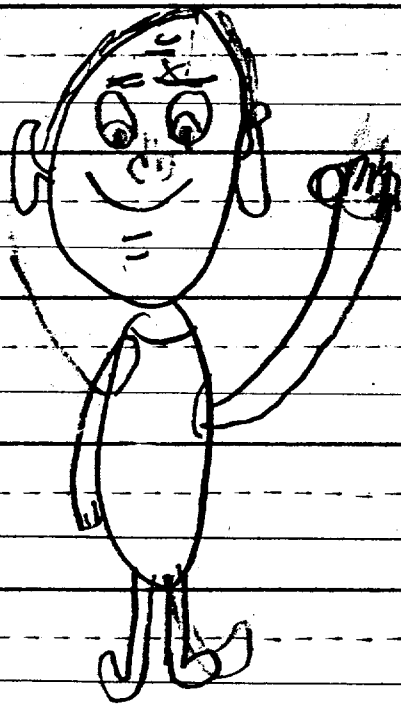
— areas that need to be researched so that young children and adults can lead successful, productive lives as citizens of our society.

APPENDIX A

big and small poem

how i am big am small
but ~~know~~ is like me
i am big i am small
i am very special know
i am like me because he would be
as special as me but
he could be himself see
the birds ~~but~~ but i wish i could
cry and never goodbye
but one thing
i am the same
always. and will be

The same thing
for Life I will ~~not~~
shrink because the
same thing.
im big im small
im the best of all.



APPENDIX B

Anacordus

Anacondas can go
to be 15 to 20 feet long.
anacondas favorite
food is rats, mice,
frogs, fish, anacondas
enemies are human, owl
muskrats, other snakes,
alligators. anaconda
are very mean
if you don't mess
with them and
they won't mess with

you. anacordas have
olive green skin often
with black rings or
spots. they live near
water and swim
in rivers. anacordas
kill their prey by
rapping their
coils around
their prey
and squeeze
very tight.

~~anacondas~~ their prey

anacondas mouth

length is 3 feet long

anacondas are

the longest snake

in the whole

South America.

anacondas are

very big

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